

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-270801

(43)Date of publication of application : 09.10.1998

(51)Int.Cl.

H01S 3/18
H01L 33/00

(21)Applicant on number : 09-071017

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(22)Date of filing : 25.03.1997

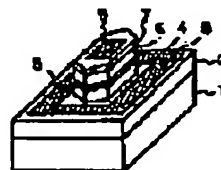
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(54) NITRIDE III-V COMPOUND SEMICONDUCTOR LIGHT EMITTING DEVICE AND ITS MANUFACTURE

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the current-light output characteristic of a nitride III-V compound semiconductor light emitting device when the laser of the element is oscillated and, at the same time, to reduce the threshold current by forming a nitride III-V compound multilayer semiconductor light emitting device into a hexagonal prism and using the two parallel surfaces of the hexagonal prism as resonator surfaces.

SOLUTION: A hexagonal prism-like laser is formed in such a way that, after a conductive GaN single-crystal thin film 2 is grown on a substrate 1 with a buffer layer in between, an SiO₂ film 3 is deposited on the thin film 2 and hexagonal windows are lithographically formed through the film 3 by applying a resist to the film 3. Then the SiO₂ film 3 is partially etched off to the thin film 2 and the resist is removed. After the resist is removed, a conductive AlGaIn clad layer 4 is grown in each window section and an undoped InGa active layer 5, a conductive AlGaIn clad layer 6, a conductive GaN contact layer 7 are successively grown on the clad layer 4 and electrodes 8 and 9 are formed. Since the two parallel resonator surfaces of the hexagonal prism structure have flatness of an atomic order, the occurrence of light losses can be reduced.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision]